Wildlife Notes—175-26

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No 175-26
8/3/82
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AUG 03 1987

WEASELS

Mustela frenata, **also known as the New York weasel and the long-tailed weasel.**

by Chuck Fergus

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Weasels are mammals belonging to the family Mustelidae. The mustelids, which are characterized by strong musk, vary in size, color, behavior, and habitat. They are found worldwide, except for Antarctica and most oceanic islands. Other Pennsylvania mustelids are the striped skunk, mink, and otter; mustelids native to Pennsylvania but no longer found in the state are the fisher and marten. Ferrets, badgers, and wolverines also belong to the family.

Three weasel species occur in Pennsylvania: the ermine *(Mustela erminea),* also called the short-tailed weasel, Bonaparte's weasel, and stoat; the long-tailed weasel *(M. frenata),* also known as the New York weasel; and the least weasel *(M. nivalis),* or mouse weasel. Ranges of the three species overlap in Pennsylvania, the Great Lakes states, and parts of Canada. In Pennsylvania, the ermine is found mostly in the northern and eastern parts, the long-tailed is common throughout the state, and the least is found in greatest numbers in the southcentral and northwest.

Weasels have long, slim bodies. Their short legs have five small-clawed toes on each foot. Their necks are long, their heads small and triangular; eyes are small in relation to head size, and the ears, set low on the skull, are rounded and well-furred. Weasels travel with a loping gait, stopping occasionally to sit on their haunches or stand on their back legs to look around.

Weasels are consummate predators. Their senses of sight, smell, and hearing are acute, their hunting instinct is keen, and they are active, aggressive, and quick. They kill and consume a wide variety of prey, including animals larger than themselves. Small rodents form the bulk of most weasels' diets. Although mainly nocturnal, weasels may hunt during the day.

They find prey mainly by scent, darting in and out of rodent burrows, checking brushpiles and rock crevices. A weasel pounces on its prey and bites the animal over the back of its skull; the weasel's forelegs hug the prey, and the hind legs kick and scratch.

A weasel has a fast metabolism and must eat more food in proportion to its body weight than other mammals of similar size. Males are typically larger than females; some biologists believe this size difference may lead males to concentrate on larger prey, relieving feeding competition when prey is scarce.

Secretive and wary, weasels are difficult to study in nature, and many gaps remain in our knowledge of their reproduction. Two of the species covered in this Wildlife Note (the ermine and the long-tailed weasel) exhibit delayed implantation of the blastocyst, common in mustelids. In delayed implantation, mating takes place in summer or autumn; the fertilized eggs go through a short period of development and then lie dormant within the female until spring, when they implant themselves in the uterine wall and continue to grow. About 25 days later, young are born.

Delayed implantation has two possible adaptive advantages: it assures that all litters arrive at a time when prey is abundant and competition for food is not extreme; and it does not restrict mating to one short period, increasing the odds that females will contact males and be bred.

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Female weasels give birth to 4-12 young, usually in underground nests. Least weasels are thought to produce several litters each year, while ermines and long-tailed weasels bear one litter in April or May. Young of all species are born blind and naked or sparsely furred. Adult males may bring food to the mother and nursing young, which develop rapidly and are on their own after weaning.

Weasels remain active year-round, seldom denning for long periods regardless of weather. During spring, summer, and fall, their fur is brown with creamy or white underparts. In Pennsylvania, most or all ermines change from brown to white for winter, and perhaps one in six long-tailed weasels turn white. Some least weasels undergo the brown-to-white transformation, which is triggered by shortening days.

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Ermine

The ermine is found in northern regions around the world. In North America, it occurs from Pennsylvania and Maryland north to New England, west across the Great Lakes states and Canada, from western Montana south in the Rocky Mountains to New Mexico, and from northern California north to Alaska. Although present throughout Pennsylvania (except perhaps in the southwestern corner), the ermine is much scarcer here than the closely related long-tailed weasel.

Adults are 9-15 inches in length, including a 1.6-3.2-inch tail; males are larger and heavier than females. Weights are 1.6-3.7 oz. Both sexes are smaller than corresponding sexes of the long-tailed weasel; a large male ermine is about the same size as a small female long-tailed. The ermine's bushy tail is shorter than that of the long-tailed weasel.

An ermine's pelt consists of soft, short underfur and long, coarse, glossy guard hairs. The sexes are colored alike, and immatures are similar to adults. Albinos are rare.

In summer, an ermine's upperparts are dark brown, slightly darker on the head and legs. The chin and throat are white, and the underparts are white or cream-colored, extending down the insides of the legs and including the feet. The end third of the brown tail is black. In winter an ermine is white, tinged with yellow on the underparts and back. The tail tip remains black.

An ermine molts twice a year, in spring and autumn. The molts are triggered not by temperature but by amount of light per day, increasing in spring and decreasing in fall. Molts usually begin on the belly and spread to the sides and back, finishing with the tail. Aside from the varying hare, the weasels are the only Pennsylvania animals to turn white in winter.

The autumn molt (brown to white) begins in October and is usually complete by late November or early December. A molting ermine looks mixed brown and white. The white-to-brown spring molt runs from mid-March to late April.

Like all weasels, ermines are alert, curious, and bold. They make a rapid "took-took-took," hiss, purr, chatter, grunt, and screech. When annoyed, they stamp their feet or emit musk from their anal scent glands.

Ermines can swim (sometimes pursuing prey in water) and climb trees, but spend most of their time on the ground. Their normal gait is a series of short bounds (about 20 inches), made with back arched. An ermine can leap five or six feet and run about 8 mph for short distances.

Prey includes mice, voles, rats, chipmunk, shrews, cottontail rabbits, frogs, lizards, small snakes, birds, insects, and earthworms, and carrion when hunting is poor. Captive ermines eat food equal to about one third of their weight every 24 hours.

Ermines consume flesh, fur, feathers, and bones of small prey, but generally just the flesh of larger animals. They may lick warm blood from a kill, but do not suck blood. They often kill more than they can immediately eat and cache excess kills.

An ermine spends most of the daytime in a den beneath a stone wall, rockpile, log, fallen tree, or abandoned building. A den may have three or four tunnels leading to it.

Breeding habits are similar to those of the long-tailed weasel. Females—including young of the year, 2-3 months old—come into heat in summer. (Males do not mature sexually until late winter or early spring following the year they were born.) Young are born from mid-April to mid-May, after a gestation period of about nine months due to delayed implantation.

The natal nest is underground, lined with leaves, grasses, fur, and feathers. The female bears 4-9 young, usually 6-7. Newborns are blind, pink, and weigh about half an ounce.

Young develop rapidly. Their eyes open at 35 days; at 45 days, they are lightly furred and play with each other inside

Mustela nivalis **is more commonly known as the least weasel or the mouse weasel.**

and outside the den. The male may help the female care for them. A seven-week-old male is larger than its mother.

Ermines are preyed on by man, large hawks and owls, foxes, snakes, and domestic cats and dogs; they are parasitized by fleas and intestinal worms. Longevity is estimated at five or six years.

An ermine's home range is thought to be about 30-40 acres, and 20 individuals have been found per square mile of good habitat. In winter and early spring, ermines travel long distances for food, often 2-3 miles per night.

In the northern part of its range, *Mustela erminea* lives in low brush and thickets along waterways in heavily forested areas. To the south, ermines inhabit open country with fencerows and rockpiles, brushy land, and occasionally swamps.

Long-Tailed Weasel

The long-tailed weasel is found from sea level to timberline from Maine across the United States and southern Canada, south to Florida, Mexico, and South America, excluding the U.S. Southwest. Pennsylvania's largest weasel, it is fairly common statewide; during years when Pennsylvania paid a bounty on weasels, eight of every ten turned in were long-tails.

The long-tailed weasel is similar to the ermine in proportion, color, and markings, although the long-tailed species is slightly larger and its tail is longer.

Adult males are larger and heavier than females. Length varies from 15-23.5 inches, including a 3.2-6.3-inch tail; weights are 2.5-9.3 oz. Sexes are colored alike. In summer, upper parts are a uniform dark brown, extending onto the feet and toes (feet and toes of an ermine are white). The dark brown tail is tipped black.

The long-tailed weasel normally becomes white only in northern sections of its range; in Pennsylvania, five of every six stay brown in winter, and farther south all individuals probably remain brown.

Two molts occur each year. The fall molt is from October into November, the spring molt from mid-February or early March into April. In autumn, molting starts on the belly and moves upward; in spring, the order is reversed.

Behavior of the long-tailed weasel is similar to that of the ermine. Long-tailed weasels are good swimmers and adept climbers that will chase a squirrel up a tree. Although generally solitary, two individuals may play together. A long-tailed weasel is a persistent, efficient predator, chasing prey, pouncing on it, hugging it with the forelegs, and biting the victim at the base of the skull.

Prey: small terrestrial mammals, bats, hares, rabbits, birds and their eggs, frogs, snakes, earthworms, insects, and carrion; smaller victims are eaten whole. A weasel can drag prey much heavier than itself.

A long-tailed weasel seldom digs a den, preferring to modify a chipmunk burrow, enlarge a hole under a stump, or move into a hollow log or a crevice in rocks, stone walls, or beneath an abandoned building. Nests are located about six inches underground and two feet from burrow entrances. Roughly nine inches in diameter, they are made of grass packed in layers and lined with shrew and mouse fur.

Breeding season is July and August, and young are born the following April or May after a 205-337-day gestation (average, 279 days). Delayed implantation occurs, with development of the eggs resuming during the last 27 days of pregnancy. One to 12 young may be born (average, 6-8).

Newborns are about 2.5 inches long and weigh 0.11 oz. They are blind, naked, and pink-skinned, and tend to make more noise in the nest than young ermines. The male brings food to mother and young. Young develop quickly: after three weeks, their backs are well-furred; at four weeks, teeth erupt; at 36 days, their eyes open, and the female begins weaning them. Soon after, the young leave the nest and disperse and by November are almost fully grown.

Females breed in their first autumn, while males do not mature sexually until the following year. Man, foxes, dogs, hawks, and owls prey on long-tailed weasels; captive specimens have lived five years, but wild individuals probably do not survive that long.

Mustela frenata lives in open woodlands and brushy fields, preferably near water. Rocky fencerows are favorite hunting grounds. Home ranges of about 400 acres have been reported from Missouri, 30-40 acres from Wisconsin. Size of an individual's range would vary with food availability and type and quality of cover.

Least Weasel

The least weasel is the world's smallest carnivore. It is found in Europe, northern Asia, and North America. On our continent it inhabits the Appalachian Mountains from Pennsylvania south to North Carolina, the northern Midwest, Canada, and Alaska (it is absent from New England and the Pacific Northwest). In Pennsylvania, *Mustela nivalis* is most common in the Allegheny Plateau area of our northwest and in the southcentral part of the state.

Least weasels are 6-8.5 inches long, including a 1.5-inch tail. They weigh 1-2 ounces. Males are slightly larger and heavier than females.

Coloration is brown above, white below. The chin and feet are white, and the brown tail has no black tip. Sexes are colored alike. In Pennsylvania, some least weasels turn white in winter; in Canada, most or all individuals change into white pelage, including the tip of the tail.

Least weasels are just as aggressive and predatory as the larger weasels and kill in the same manner. If disturbed near its nest, an adult least weasel will chirp at its enemy. The chirp is a threat cry; least weasels also hiss (when afraid or threatened) and trill (in friendly encounters with other least weasels). When agitated, they spray musk from their anal scent glands.

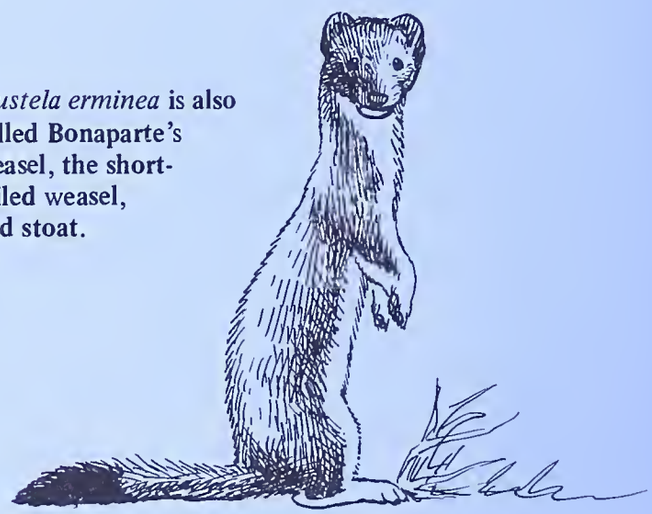
The species preys on mice, voles, small birds, insects, earthworms, and small amphibians. Sometimes they kill more than they can eat and cache uneaten prey in their dens. Least weasels are nocturnal, solitary, and seldom seen; they spend most of their time hunting and consume food equaling 40-50 percent of their body weight each day.

Least weasels breed and reproduce year-round, with the possible exception of winter. Delayed implantation does not occur, and two or more litters may be produced each year. A female's estrus lasts four days. If bred, she bears 1-6 young (usually 4-5) following a 35-day gestation period.

Young are blind and naked, but develop rapidly. Hair covers their bodies by day four; canine teeth erupt at 11 days; eyes open at 26-30 days; and weaning occurs between 42-49 days, after which they are on their own. Immatures reach adult length after about eight weeks, and adult weight when 12-15 weeks old. Females mature sexually in four months, males in eight.

Least weasels inhabit meadows, fields, brushy land, or woods. They may take over nests and burrows of mice, moles, and voles, lining them with fine grass or fur; in winter, the fur lining may be an inch thick and matted like felt. Least weasels rarely travel more than 100 yards from their home burrows, and the average individual range is estimated at two acres.

This tiny weasel occupies a lower position in the food chain than ermines and long-tailed weasels. It is preyed on by the larger weasels, snakes, owls, and cats. Longevity in the wild is not known.



Mustela erminea **is also called Bonaparte's weasel, the short-tailed weasel, and stoat.**

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